# Operable Unit 2

ELMENDORF AIR FORCE BASE, ALASKA

3rd Wing Public Affairs (907) 552- 8970 Fax 552-5111 www.elmendorf.af.mil

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**Active Source Areas:** ST20, ST41.

**Contaminant Sources:** Underground storage tanks.

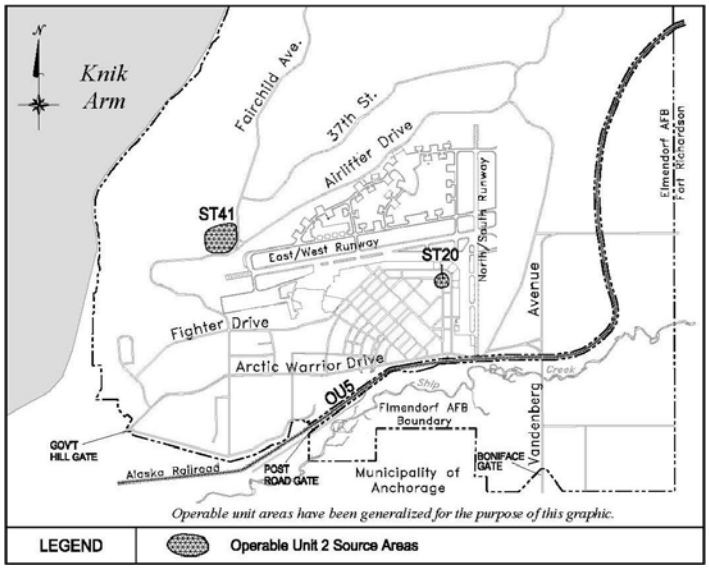
**Media Affected:** Groundwater, soil, and surface water.

**Contaminants of Concern Outlined in the Operable Unit 2 Record of Decision:** *Operable Unit 2 Groundwater:* Gasoline-range organics, bis(2-ethylhexyl)phthalate, benzene, ethylbenzene, toluene, and xylenes. *Operable Unit 2 Surface Water:* Diesel-range organics, gasoline-range organics, 1,2-dichloroethane, benzene, ethylbenzene, toluene, and xylenes.

**Status:** Groundwater monitoring is ongoing. Land use controls restrict use of shallow groundwater.

## *Site Description*

**Location:** Operable Unit 2 is located in the central (ST20) and western (ST41) portion of the base. The operable unit contains two areas where storage tanks have been buried. ST20 is the former site of a 338,000-gallon underground storage tank that was used to store Bunker C fuel oil for the original Base power plant. After the power plant was shut down, the tank was used to store waste oils, used solvents and other wastes generated by industrial shops. The tank was cleaned and demolished in 1990. ST41 is the former site of 4 one-million gallon underground fuel storage tanks.




**Contamination Overview:** An interim Record of Decision for the groundwater contamination at ST41 was signed in December 1992. As a result, a free-product and dissolved-phase recovery treatment system was installed at ST41. All viable free product has been recovered, therefore the active free product recovery system specified by the Interim Remedial Action Record of Decision has been shut down. This ended in 1998. However, passive free product recovery still occurs during sampling events when free product is encountered.

The Operable Unit 2 Record of Decision was signed in May 1995 and focused on tank removal and continued groundwater cleanup at ST41. Groundwater monitoring is conducted at both ST20 and ST41.

***Key Milestones***

| ACTIVITY | DATES |
|---|---|
| Federal Facilities Agreement Signed | November 1991 |
| Management Plan | November 2, 1992 |
| Interim Remedial Action Record of Decision | December 15, 1992 |
| Interim Remedial Action Construction | September 30, 1993 |
| Begin Free Product Recovery | September 30, 1993 |
| Remedial Investigation / Feasibility Study | March 18, 1994 |
| Record of Decision | May 19, 1995 |
| Remedial Design / Action Scope of Work | June 9, 1995 |
| Remedial Action Start | July 24, 1996 |
| Remedial Action Report | October 30, 1998 |
| First Five-Year Remedy Review | October 20, 1998 |
| Second Five-Year Remedy Review | December 17, 2003 |

## *Contaminants of Concern*

Contaminants of concern were detected in groundwater and surface water at Operable Unit 2. Maximum detection levels are compared to cleanup levels specified in the Operable Unit 2 Record of Decision. Contaminants, maximum concentrations detected, current contaminant levels, and cleanup levels for groundwater and surface water are presented in Table 1.

**Groundwater:** Elevated concentrations of fuel-related chemicals have been found in groundwater samples taken from wells in the ST41 area where a layer of fuel has historically been found floating on the groundwater. During monitoring of these analytes in the past decade, all contaminants of concern, with the exception of gasoline-range organics, benzene, and ethylbenzene have naturally attenuated to concentrations that are now below cleanup levels.

***Table 1. Current Contaminants of Concern***

| *Source Area* | *Contaminant* | *Maximum Concentration* | *Current Concentration* | *Cleanup Levels* |
|---|---|---|---|---|
| *Groundwater (micrograms per liter)* | | | | |
| ST20 | Gasoline-Range Organics | **2,000** | **1,700** | 1,300 |
| ST41 | Benzene | **30,000** | **82** | 5 |
| | Ethylbenzene | **4,700** | 180 | 700 |
| *Surface Water (micrograms per liter)* | | | | |
| ST41 | Benzene | **1,500** | **130** | 10 |

Bold font indicates that the concentration exceeds cleanup levels.

**Surface Water:** Elevated concentrations of fuel and fuel constituents were identified in samples taken from surface water seeps at ST41 before the installation of the interim remedial action. Contaminated seeps were in areas where contaminated groundwater emerged as surface water. To date, benzene is the remaining contaminant of concern at concentrations above cleanup levels.

## *Potential Pathways and Receptors*

The free product recovery system at ST41 was installed as a means of source control and was used to eliminate potential pathways for exposure. The surface water and groundwater that would flow into the wetland areas were being collected and treated as part of the free product recovery system. The wetland areas that receive surface water from the seeps are in remote locations, seldom visited by humans. Therefore, the potential for exposure in these areas is limited. Exposure to contaminated groundwater is also limited, as the Base prohibits use of the shallow aquifer in the outwash plain and the deep aquifer has not been affected.

## *Summary*

Contamination at Operable Unit 2 has resulted from fuel releases at ST20 and ST41. Although groundwater contaminants may continue to migrate, receptor exposure is limited. The deep aquifer has not been affected by Operable Unit 2 contaminants.

The remaining remedy for contaminated media at Operable Unit 2 involves monitoring natural attenuation in the shallow groundwater. Contaminants in groundwater are expected to degrade naturally. Groundwater monitoring will be performed to ensure that contamination in groundwater continues to degrade.

Findings generated during the recent five-year review show that Operable Unit 2 Record of Decision cleanup levels and remedies are still considered protective of human health and the environment.

### *Information Repositories*

Documents associated with these project activities are available for public review at:

*Elmendorf Library*
3rd Services Squadron
10480 22nd Street
Elmendorf AFB, AK 99506
(907) 552-3787

*Alaska Resources Library & Information Services (ARLIS)*
3211 Providence Drive
Anchorage, AK 99508
(907) 272-7547

For additional information, please contact 3rd Wing Public Affairs by telephone at (907) 552-8970, or at 10480 22nd Street, Suite 118, Elmendorf AFB, AK 99506-2500.